

signal head light source comprises light emitting diodes.

~~16~~²⁰(new). The pedestrian crosswalk signal apparatus of claim ~~11~~¹ wherein said signal head light source is directed in a beam having a vertical angular range of 0 degrees to 5 degrees.

~~17~~²¹(new). The pedestrian crosswalk signal apparatus of claim ~~11~~¹ wherein said signal head members are installed facing only oncoming vehicle traffic.

~~18~~²²(new). The pedestrian crosswalk signal apparatus of claim ~~11~~¹ wherein said signal head members are installed across the entire length of the pedestrian crosswalk.

~~19~~²³(new). The pedestrian crosswalk signal apparatus of claim ~~11~~¹ wherein said beam of light flashes in a predetermined sequence, and remains flashing for a predetermined time.

~~14~~²⁴(new). The pedestrian crosswalk signal apparatus of claim ~~11~~¹ wherein said signal head member includes a lens assembly to focus light into a beam in the direction of an approaching vehicle.

~~15~~²⁵(new). The pedestrian crosswalk signal apparatus of claim ~~11~~¹ wherein said plurality of signal head members each include a base plate portion embedded in said roadway.

REMARKS

Generally

The Examiner has indicated that claims 1 - 10 are pending in the application; and that claims 1 - 10 are rejected under 35 U.S.C. 103(a) as unpatentable over Ogle. Applicant, by this Amendment, cancels the rejected claims, and submits new claims 11 - 25, respectfully submitted to be patentable over the cited reference. Applicant submits the following argument in support thereof.

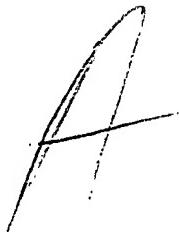
Response to Rejections Based on 35 U.S.C. § 103(a)

Ogle discloses a cross-walk warning light system. The Examiner states: "Since the

overall purpose of the system of Ogle is to illuminate a crosswalk area in a manner such that pedestrians in the crosswalk would have been highly noticeable by approaching vehicles, it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the signal heads in the roadway with an above pavement height of $\frac{1}{2}$ to $\frac{3}{4}$ inches and as well to direct the beam of light in a vertical angular range of 0 degrees to 5 degrees or in any desirable direction which would have ensured that oncoming drivers would have visibly recognized the light beams and as well pedestrians in the crosswalk so as to reduce the possibilities of the danger of collision of the vehicles with the pedestrians." Applicant respectfully disagrees.

First, with respect to Ogle's structure, Ogle's emitters (light sources, and specifically lasers) 44 are carried by support poles 40. No suggestion is made to place these support poles in the roadway where, if they were to be so placed, they would certainly block traffic. As for the size of Ogle's structure, Ogle's IR sources 62N and 62W are mounted "a small distance, i.e., approximately 12 - 18 inches, above the ground on support pole 40" (Ogle specification column 3, lines 47 - 48). While Ogle's specification does not define how high the emitters themselves are positioned on the support poles, they are illustrated as being higher than the IR sources 62N and 62W, and therefore are greater than 12 - 18 inches from the ground. Thus, Ogle's support-pole mounted emitters are incapable of being placed in a roadway due, if for no other reason, to the sheer size of the structure.

Furthermore, even one skilled in the art could not simply modify Ogle's emitters and place them in a roadway. It is respectfully submitted that it is not an obvious matter to place lights in the roadway. Indeed, it is rarely done. Traffic signals, caution lights, and railroad crossing lights are routinely mounted on poles adjacent the roadway (as in Ogle), or suspended well above the roadway, but not in the roadway. In fact, it is counterintuitive to attempt to place electrical devices such as lights in the harsh environment of a roadway surface, where the lights are subject to impact by vehicles, heat, and debris. Ogle does not address the issues of the

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requisite size or durability of an in-pavement system. Applicant's inventive and durable in-pavement system solves all of these problems.

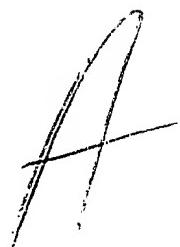
Next, with respect to Ogle's orientation, Ogle's lights by definition must be perpendicular, not parallel, to the roadway, in order for his invention to work. If Ogle's lights were directed up or down the roadway, they wouldn't define the crosswalk as he intended, but would instead shine laser beams into the eyes of the drivers of oncoming traffic, whose drivers would thus see only bright lights coming from the sides of the road.

Indeed, Ogle's specification presupposes that the light beams are directed only across the roadway. In Ogle's "most preferred embodiment, opposing emitters, i.e., emitters that are aimed co-linearly and are associated with the same crosswalk, are activated simultaneously. This most preferred arrangement substantially prevents a light beam from being blocked by a pedestrian stepping in its path" (Ogle specification column 3 line 67 - column 4 line 5). Ogle thus acknowledges that the beams are directed across the roadway, not parallel to it, and that the beams are subject to blockage by a pedestrian stepping into its path (unfortunately, even in this, Ogle's most preferred embodiment, it would only take two pedestrians at opposite ends of the crosswalk to effectively block both beams and entirely defeat the crosswalk illumination).

Applicant's invention, on the other hand, intentionally directs its light beams from the surface of the roadway, up (or down) the roadway, away from the crosswalk, and in the direction of the vehicle traffic. Ogle's system does not, and cannot, do this.

Conclusion

In view of these amendments and comments it is respectfully submitted that all pending claims are allowable, and such allowance is respectfully requested. The Examiner is invited to call Applicant's undersigned attorney if, in the opinion of the Examiner, a telephone conference
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will in any way expedite prosecution of this application.

Respectfully Submitted,

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